



Figure 3.6: Emerging Haul Routes for Construction Traffic (Inbound in green and outbound in red) – See Chapter 13: Material Assets (Transportation) also.

Two alternative scenarios were developed in detail based on clockwise and anti-clockwise circulation around the block bounded by Moore Street, O'Rahilly Parade and Moore Lane.

The preferred option is the anticlockwise circulation included the local traffic management proposals presented in Figure 3.7. Inbound access for the majority of construction vehicles is proposed from Parnell Street to Moore Street / O'Rahilly Parade and outbound departures from Moore Lane to Parnell Street.

This preferred option was selected on the basis of a number of local constraints including: -

- The lack of a stacking lane on Parnell Street in advance of the left turn into Moore Lane should there be a delay entering Moore Lane for whatever reason.
- The restricted width of the left turn from Parnell Street around Conway's public house into Moore Lane which could cause delays due to the slow deliberate turning for vehicles across a busy restricted area.
- The relatively easy right (and left) turns from Parnell Street to Moore Street.
- The availability of a stacking area for the right (and left) turns from Parnell Street into Moore Street.
- Local traffic management on Moore Lane would require the presence of temporary traffic signals and/or flagmen at different locations and at different times to facilitate vehicles passing depending on the movements in progress.

Arrivals are proposed from Parnell Street via Moore Street and O'Rahilly Parade. Some limited departures are proposed to O'Connell Street Upper via Henry Street up to 11h00 after which Henry Street is restricted to pedestrians only. The remaining departures are proposed to Parnell Street via Moore Lane.

For further detail on the Outline Construction & Demolition Management Plan for Site 3, Site 4 & Site 5, we refer to Appendix 3.2 – 3.4 respectively of this EIAR where greater detail can be found.

Alternative Access for Long Vehicles to Site 3

Arising from the restricted junctions at both ends of O’Rahilly Parade, an alternative part time access to Site 3 from Parnell Street via Moore Lane is also proposed. This access would be for long vehicles only and would operate in the mornings up to 11h00 as illustrated in Figure 3.7.

Long vehicles travelling south on Moore Lane would require the presence of temporary traffic signals and/or flagmen at different locations at different times depending on the movements in progress.

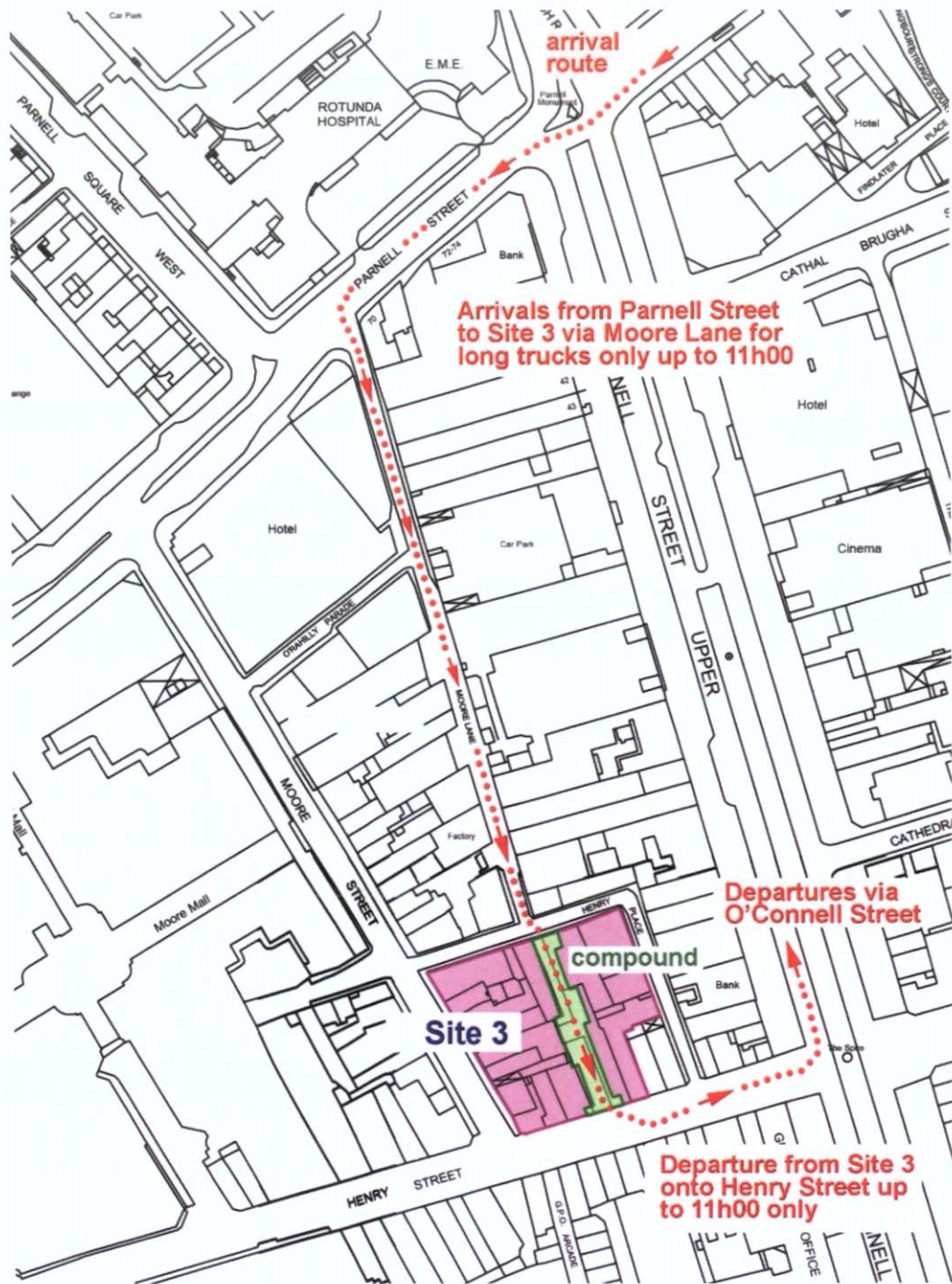


Figure 3.7: Alternative Access for Long Vehicles to Site 3 – See Chapter 13: Material Assets (Transportation) also.

3.7.1.3 Air Quality – Dust & Dirt

The appointed Contractor shall put in place a regime for monitoring dust levels in the vicinity of the Site during the Construction Phase. The level of monitoring and adoptions of mitigation measures will vary throughout the Construction Phase depending on the type of activities being undertaken and the prevailing weather conditions at the time

The potential impacts associated with air quality during the Construction Phase are addressed in Chapter 9: Climate (Air Quality & Climate Change).

3.7.1.4 Noise & Vibration

The potential impacts associated with noise and vibration during the Construction Phase, are addressed in Chapter 12: Air (Noise & Vibration).

3.7.1.5 Waste

Chapter 14: Material Assets (Waste) of this EIA includes details regarding the anticipated amounts of waste generated from the project, the subsequent potential impacts and the mitigation measure proposed to ameliorate any anticipated negative impacts. An Outline Construction and Demolition Waste Management Plan has been prepared also (contained in Appendix 14.1 of this EIA) and sets out how the demolition and construction waste will be managed as part of the Proposed Development.

In summary, all waste generated during the construction and operational periods is proposed to be appropriately disposed of in accordance with the Waste Management Plans.

3.7.1.6 Health & Safety Issues

The development will comply with all Health & Safety Regulations during the construction of the project. Where possible potential risks will be omitted from the design so that the impact on the construction phase will be reduced.

3.7.2 Operational Phase

The Proposed Development is a mixed-use development comprises residential, retail, café / restaurant, office, cultural, and hotel uses.

The primary direct significant environmental effects will arise during the Construction Phase. As a result, the Operational Phase of the Proposed Development is therefore relatively benign and not likely to give rise to any significant additional impacts in terms of activities, materials or natural resources used or effects, residues or emissions which are likely to have a significant impact on human beings, flora and fauna, soils, water, air and climate.

The primary likely significant environmental impacts of the Operational Phase as a result of the Proposed Development are fully addressed in the relevant specialist chapters of this EIA.

The Proposed Development also has the potential for cumulative, secondary and indirect impacts (i.e. traffic) and can be difficult to quantify due to complex inter-relationships.

However, all interactions and cumulative impacts are unlikely to be significant, have been addressed in Chapter 20: Summary of Cumulative Impacts and Interactions of this EIA.

3.8 Related Development and Cumulative Impacts

Each Chapter of the EIAR includes a cumulative impact assessment of the Proposed Development with other planned projects in the immediate area. The potential cumulative impacts primarily relate to traffic, dust, noise and other nuisances from the construction of the development, with other planned or existing projects, and each of the following EIAR chapters has regard to these in the assessment and mitigation measures proposed.

As such, with the necessary mitigation for each environmental aspect, it is anticipated that the potential cumulative impact of the proposed development in conjunction with the other planned developments will be minimal.

4 EXAMINATION OF ALTERNATIVES

4.1 Introduction

This Chapter of the EIAR sets out the reasonable alternatives that have been considered for the Proposed Project and provides an indication of the main reasons for the final scheme choice, taking into account the effects on the environment in the context of the characteristics of the site (receiving environment). Article 5(1)(d) of the EIA Directive requires Environmental Impact Assessment Reports (EIAR) to include the following: -

“a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment”.

Paragraph 2 of Annex IV elaborates the requirement, as follows: -

“A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.”

Pursuant to Section 3.4.1 of the Draft Environmental Protection Agency (EPA) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2017), the consideration of alternatives also needs to be cognisant of the fact that: -

“...in some instances some of the alternatives described below will not be applicable – e.g. there may be no relevant ‘alternative location’...”

In accordance with Draft EPA Guidelines (EPA, 2017), different types of alternative may be considered at several key phases during the process. As environmental issues emerge during the preparation of the EIAR, alternative designs may need to be considered early on in the process or alternative mitigation options may need to be considered towards the end of the process.

The Draft EPA Guidelines (EPA, 2017) states: -

“The objective is for the developer to present a representative range of the practicable alternatives considered. The alternatives should be described with ‘an indication of the main reasons for selecting the chosen option’. It is generally sufficient to provide a broad description of each main alternative and the key issues associated with each, showing how environmental considerations were taken into account in deciding on the selected option. A detailed assessment (or ‘mini-EIA’) of each alternative is not required.”

Thus, the reasonable alternatives studied by the project design team and in the context of the associated Regulations, the alternatives of the proposed project in this EIAR Chapter as follows: -

- Alternative Locations.
- ‘Do Nothing’ Alternative.
- Alternative Processes.
- Alternative Mitigation Measures.
- Alternative Layouts & Designs.

DCC PLAN NO 2862/21
RECEIVED: 01/06/2021

This chapter has been prepared by Stephen Little, Managing Director and Michael O’Sullivan, Senior Planner, of Stephen Little & Associates. Stephen has 29 years professional experience of town planning in Ireland, is a Corporate Member of both the Irish Planning Institute and the Royal Town Planning Institute and holds a Diploma in EIA Management (UCD). Michael has 7 years’ professional experience in the planning in both the public sector and private consultancy in Ireland, has a MPlan – Master in Planning & Sustainable Development and is a Corporate Member of the Irish Planning Institute.

4.2 Development Rationale

The proposed development seeks to provide a mixed-use development and related facilities on lands zoned “Z5 – City Centre”. The nature of the development proposed is actively promoted at this location by Dublin City Council (DCC), through its Development Plan and having regard to other strategic plans and guidance.

The assessment of the proposed scheme in this EIAR has had regard to the detailed design as described and illustrated in the accompanying plans & particulars which accompany the 3no. separate and concurrent planning applications to DCC. This includes the relevant drawings and reports prepared by the Design Team.

4.3 Main Alternatives Studied

The main alternatives considered during the development of this project comprise alternative design solutions and layouts for a mixed-use development at the subject site.

4.3.1 Alternative Locations

Under the Dublin City Development Plan 2016 – 2022, the site is subject to the zoning objective, “Z5 – City Centre”, in common with much of the city centre area in the immediate vicinity of the application site. The land use objective for the Z5 zoning seeks: -

“To consolidate and facilitate the development of the central area, and to identify, reinforce, strengthen and protect its civic design character and dignity.”

The proposed development represents a sustainable, compact redevelopment, regeneration and revitalisation of an underutilised brownfield site at a city centre location. The proposed development is expected to generate the critical mass that will make a significant contribution to developing a strong city core.

National, regional and local policy emphasise the importance of reinforcing the primacy of Dublin city centre within the retail hierarchy, of encouraging the redevelopment of brownfield sites in city centre locations and encouraging residential and other development proximate to public transportation.

As such it is considered that the site is entirely suitable for the nature of development as proposed in the Planning Application. It is not therefore necessary to consider an alternative site location for the proposed development.

4.3.2 ‘Do-Nothing’ Alternative

In the event of a ‘do-nothing’ scenario, the site would remain ‘as-is’ with the site remaining as a brownfield urban regeneration opportunity site in the city of Dublin City Centre. It would remain a hugely under-utilised part of the City that has been identified for regeneration/redevelopment since the Integrated Area Plan for O’Connell Street in 1997.

The subject site has been zoned for “Z5 – City Centre” which promotes mixed-use development to consolidate and strengthen the role of the city centre.

A do-nothing approach would be contrary to the Council’s objectives to promote compact urban development and the regeneration of brownfield lands at this site, in accordance with national, regional and local planning policy and guidance. It would potentially result in a failure to meet the key requirements of the Core Strategy – to promote economic growth; to achieve a compact, integrated city and promote socially inclusive communities; to increase awareness of cultural heritage; to create a safe, connected, legible and active city centre; to encourage greater use of sustainable transport. An opportunity to achieve efficient and compact development which will benefit from a significant degree of public transport connectivity (Luas, Bus, bicycle and future Metro Station) will be lost. A ‘do nothing’ approach would be considered inappropriate from a planning, employment, housing and tourism perspective.

From an environmental perspective, beyond impact on human health from a failure to deliver compact urban form (mix of uses on brownfield, underutilised, city centre lands); socially inclusive communities (mix of uses including residential units); further sustainable development based on alternatives to travel by private car (development in a highly accessible location); and sense of cultural identity and civic pride (awareness, conservation and adaptive reuse of cultural heritage), a 'do nothing' approach is otherwise likely to result in a neutral impact on the environment in respect of material assets, land, water, air, climate and biodiversity.

4.3.3 Alternative Processes

Alternative processes for the proposed housing, supporting facilities, amenities and infrastructure, at construction and operational phase of the development, are discussed below: -

- **Construction Phase:** The proposed construction works comprise relatively standard building construction processes. As such there are no specific alternative construction processes identified in this EIAR.
- **Operational Phase:** No new, unusual or technically challenging operational techniques are required, as such no alternative operational processes have therefore been considered at this point.

4.3.4 Alternative Mitigation Measures

The mitigation measures outlined in the various chapters of this EIAR are considered appropriate to the location, nature and extent of the project and its potential impacts. Where relevant, any alternative mitigation measures have been considered within the various chapters of this EIAR.

4.3.5 Alternative Layouts & Designs

The most important of the reasonable alternatives considered are alternative layouts and designs, so these are considered in a little more detail.

This section provides an overview of how the proposed development has evolved to date by way of consideration of alternative designs and how the final scheme within the 3no. separate and concurrent planning applications made to DCC has been reached. Various options were considered as each of the 3no. Sites progressed and key considerations and amendments to the design were incorporated, having regard to the environmental issues pertaining to the lands.

The main alternative layouts and designs related to the developments being proposed on Site 3 and Site 4. In the case of Site 5, the alternatives considered related primarily to the actual material and colour to be used in the treatment of the façade addressing the new civic square and are not considered as a main, or significant alternative design as a result.

The EIAR provides reasonable evidence that the proposed development can be accommodated at this location without predicted risk of significant adverse impact on the environment, subject to implementation of the identified mitigation measures at construction and operational stages.

No specific further alternatives in respect of the nature, design and layout of the proposed development have been identified in the recommended EIAR mitigation measures.

4.3.5.1 Permitted Scheme – DCC Reg. Ref. 2479/08 (ABP Ref. PL29N.232347)

On 24 April 2008 planning permission was sought by Chartered Land Limited (the Applicant's predecessor) for commercial-led mixed use redevelopment of lands amounting to c. 2.17 Ha. That site did not conclude the Patrick Conway's Public House, which now forms part of the Dublin Central Masterplan.

That proposed development comprised a mixed-use development (c. 158,026 sq. m) with five basement levels and rising to 13no. storeys (from Level -5 to Level +12). A new east-west street connecting O'Connell Street and Moore Street and another New Street connecting with Henry Street was also proposed.

The uses proposed on site included retail, including a major anchor store, office, residential, cultural, restaurants, bars and open space. A large roof top garden, with a visitor attraction in the form of a Sky Lift and observation deck was proposed at roof level or Level +13.

The decision by DCC was appealed to An Bord Pleanála by a number of parties (ABP Ref. PL29N.232347). In April 2009, An Bord Pleanála held an Oral Hearing of the project.

By letter dated 11 August 2009, An Bord Pleanála issued a Section 132 letter inviting the Applicant to address particular concerns raised by the Board in the form of a revised scheme. That Section 132 Letter sought to address the concerns of the Inspector (16no. items).

In March 2010, the Board made an Order to Grant Permission for the revised development, subject to Conditions.

The revised permitted proposal ultimately comprises a retail-led mixed use development (total gross floor area c. 122,892 sq. m), including retail, restaurant / cafe, office, gallery, commemorative centre and residential uses, in buildings ranging from 3 to 6 storeys, over three levels of enclosed basement parking, with an associated network of open, sheltered and enclosed streets and spaces, and associated site development works including building demotion and retention.

An Extension of Duration was granted by Dublin City Council on 21 July 2016 for a further 5 years up to 6 May 2022 for the permitted scheme outlined above (DCC Reg. Ref. 2479/08 x1).

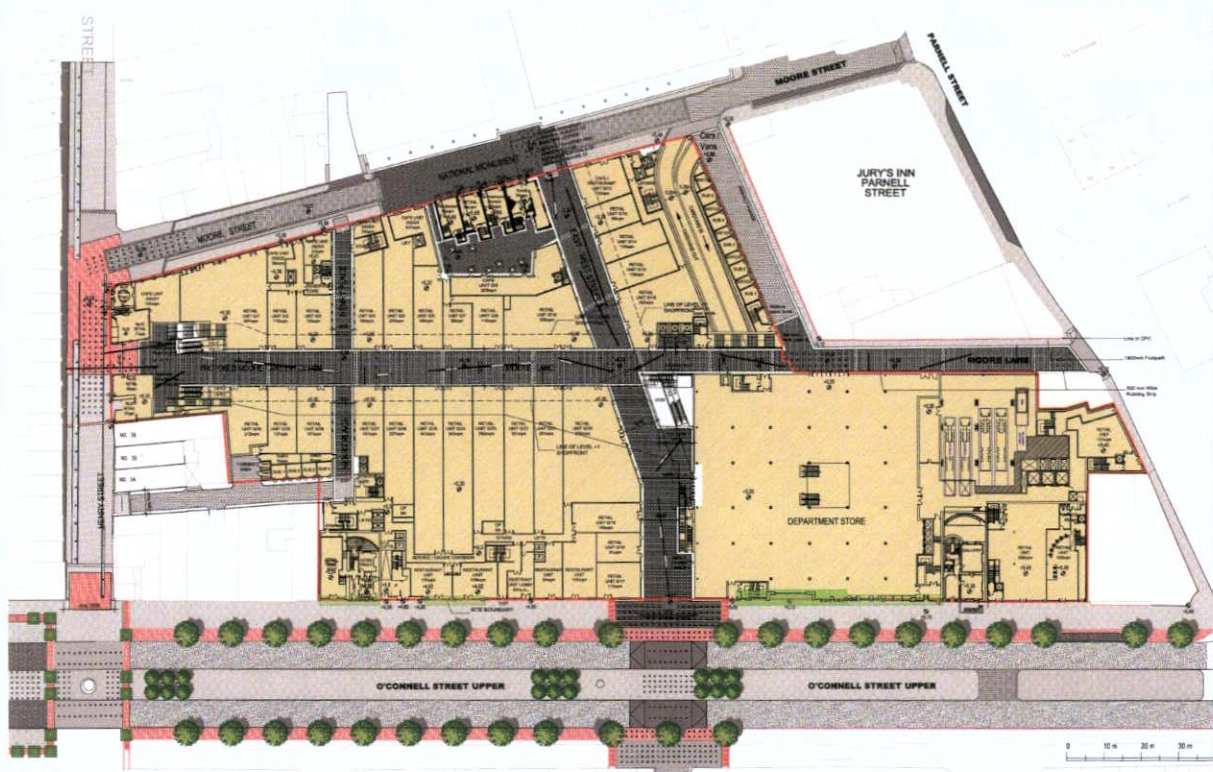


Figure 4.1: Layout of the permitted scheme granted by An Bord Pleanála – DCC Reg. Ref. 2479/08 (ABP Ref. PL29N.232347).

The permitted scheme outlined above comprises the entire of the Masterplan area. The Proposed Development now being proposed comprises part only, within Site 3, 4 and 5. While still possible to implement the permitted scheme outlined above, the already permitted layout and design does not facilitate the future MetroLink Project being designed by Transport Infrastructure Ireland (TII).

As set out in Chapter 3: Description of Proposed Development the Applicant has agreed a Memorandum of Understanding with the National Transport Agency (NTA) / TII to complete the enabling works that would accommodate the future station, but which would also ensure that the Applicant's project was structurally independent of, and not prejudicial to, the MetroLink project (Metro Enabling Works – MEW). There is on-going design co-ordination between the Applicant's Design Team and TII with regard the future station interface with Site 2AB and Site 2C.

As such, the permitted scheme is no longer considered a viable option as the design and layout does not cater for the implementation of the MetroLink Station – a key piece of national public transport infrastructure.

Environmental Effects of the Final Proposed Development compared to Permitted Scheme			
Environmental Factor	Headings Under which the Environmental Factors were assessed	Topic	Comparative Effect of preferred option
Population and Human Health		Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Biodiversity		Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Land, Soil & Geology		Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Water	Surface Water	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Waste Water	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Water Supply	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Flood Risk	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Climate	Air Quality & Climate Change	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Sunlight / Daylight	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Air	Noise and Vibration	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.

Material Assets	Traffic and Transport	Construction Phase Operational Phase	<u>Neutral, imperceptible, temporary</u> Site works will be largely identical. <u>Negative, significant and long-term</u> MetroLink station not facilitated to provide significant public transport hub in Dublin City centre.
	Waste	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Landscape and Visual	Visual Impact	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Cultural Heritage	Architectural Heritage	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Archaeological Heritage	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.

4.3.5.2 Dublin Central Masterplan – Mid. 2020

To date, multiple meetings have been held with the Planning Department of DCC in relation to the re-development proposals for the Dublin Central. On each occasion the Conservation Department has been part of these discussions.

A proposal was included in the earlier stages of the Masterplan to include a canopy made up of a series of individual structures (single column with a pad on top) to give the sense of a sheltered, or covered street. Furthermore, a modest projection of these structures into O’Connell Street was proposed to mark the entrance of the New Street (similar to that of the Carton Cinema). The width of this new street and how the proposed buildings addressed the street varied north and south.

DCC raised concerns at Pre-Planning consultation stage that the canopy would impact on the views along O’Connell Street and would potentially ‘compete’ with the portico projection of the GPO. DCC also raised concerns regarding how the proposed buildings addressed the street varied north and south of it and also that the new street was too wide in the context of how this impacted on O’Connell Street.

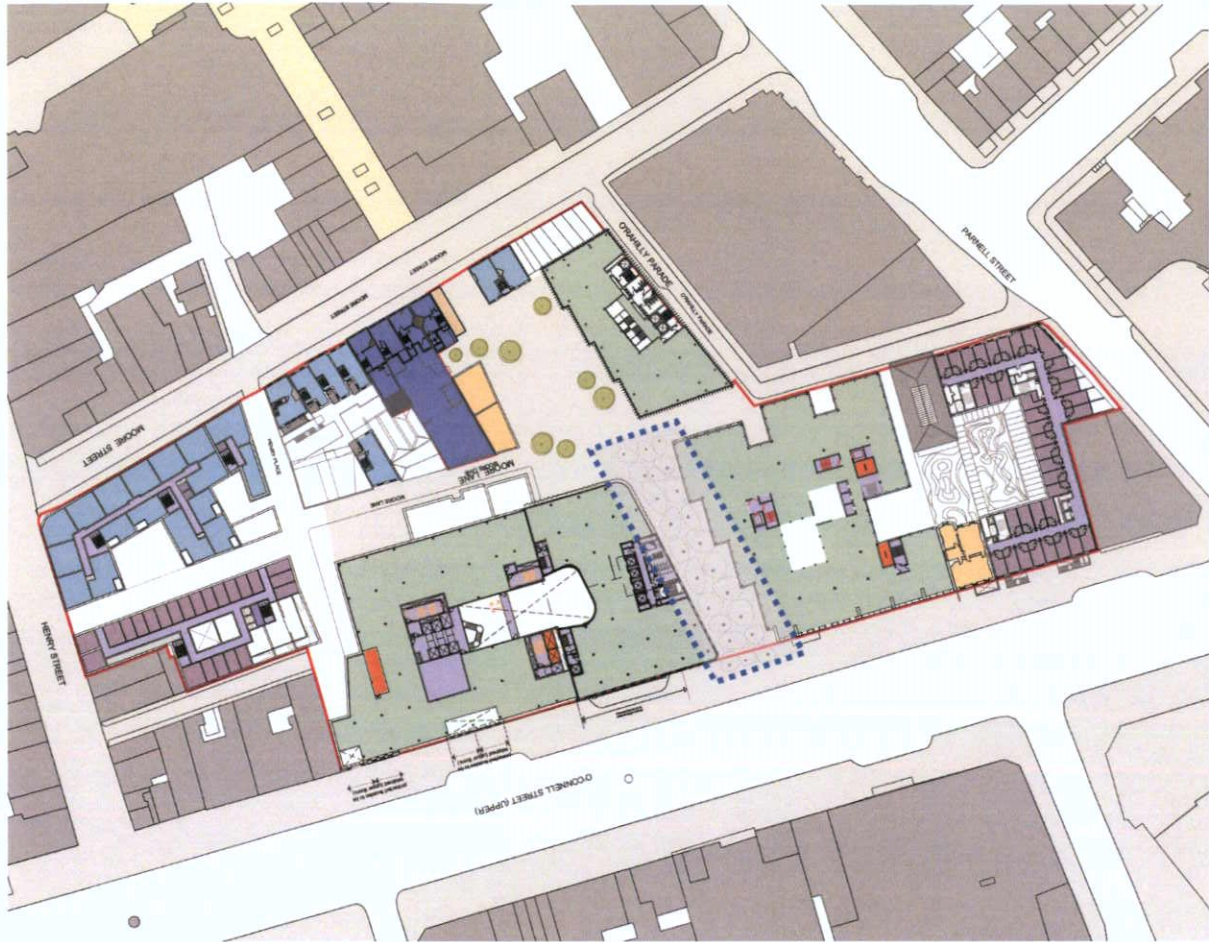


Figure 4.2: Iteration of the Masterplan from July 2020 showing the inclusion of a canopy within the New Street proposed between O’Connell Street and Moore Street – outlined by a blue dashed line – Overlay by SLA.

As such, having considered the matter further the proposal to include the canopy was omitted from the Masterplan, the new street was narrowed and a more complimentary and coherent approach to the building frontages along either side of the street were introduced following the comments provided by DCC.

Environmental Effects of the Final Proposed Development compared to Masterplan (Mid. 2020)			
Environmental Factor	Headings Under which the Environmental Factors were assessed	Topic	Comparative Effect of preferred option
Population and Human Health		Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Biodiversity		Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Land, Soil & Geology		Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.

Water	Surface Water	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Waste Water	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Water Supply	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Flood Risk	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Climate	Air Quality & Climate Change	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Sunlight / Daylight	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Air	Noise and Vibration	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Material Assets	Traffic and Transport	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Waste	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Landscape and Visual	Visual Impact	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Cultural Heritage	Architectural Heritage	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Archaeological Heritage	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.

4.3.5.3 Dublin Central Masterplan – December 2020

The Applicant's Design Team and TII have been liaising closely with regard the future station interface with Site 2AB and Site 2C.

The NTA and TII have also been engaging with DCC with regard the development of MetroLink station at O'Connell Street. DCC sought to have the location of the station beneath Site 2AB and Site 2C to be adjusted such that No. 59 – 60 O'Connell Street could be retained. Under the original design for the station, No. 59 – 60 O'Connell Street would have been demolished with the exception of the protected facades.

TII amended the design of the station location beneath Site 2AB and Site 2C (essentially this reduced the length of the station) so that that No. 59 – 60 O'Connell Street could be retained. It is noteworthy that neither No. 59, nor No. 60 Upper O'Connell Street are owned, or controlled, by the Applicant.

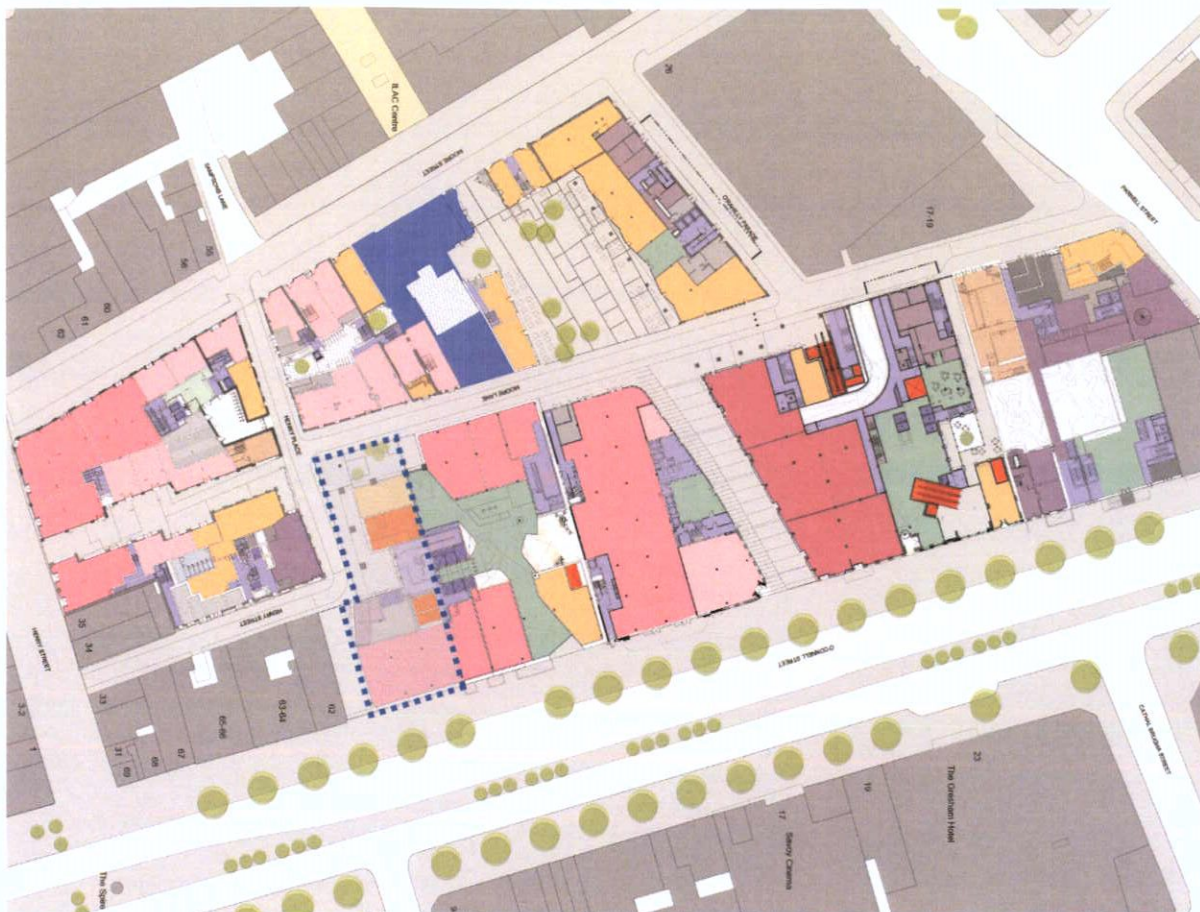


Figure 4.3: Dublin Central Masterplan based on design and layout as of December 2020. Location of No. 59 – 60 shown indicatively by a blue dashed line – Overlay by SLA.

In effect, the Masterplan has been amended. The houses at No. 59 – 60 O’Connell Street are not under the Applicant’s control and have been omitted as part of the overall proposal. The rear plot of No 59 – 60 O’Connell Street has been included in the current Masterplan, in order to retain No. 60A O’Connell Street (or No. 19 Henry Place)– known as the ‘Reading Room’ and facilitate fire escape stair from the future Metro station below.

Environmental Effects of the Final Proposed Development compared to Masterplan (December 2020)			
Environmental Factor	Headings Under which the Environmental Factors were assessed	Topic	Comparative Effect of preferred option
Population and Human Health		Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Biodiversity		Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Land, Soil & Geology		Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.

Water	Surface Water	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Waste Water	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Water Supply	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Flood Risk	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Climate	Air Quality & Climate Change	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Sunlight / Daylight	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Air	Noise and Vibration	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Material Assets	Traffic and Transport	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Waste	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Landscape and Visual	Visual Impact	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Cultural Heritage	Architectural Heritage	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Archaeological Heritage	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.

4.3.5.4 Site 3 – Retention of Existing Fabric

As noted above, multiple meetings have been held with the Planning Department of DCC in relation to the re-development proposals for the Dublin Central. On each occasion the Conservation Department has been part of these discussions.

With regard Site 3 DCC Planning Department and Conservation Department raised concerns regarding the extent of existing building fabric being retained. In particular concerns were raised about the approach on Henry Street.

Following a review of the proposal by MOLA Architects, Molloy & Associates Conservations Architects and Waterman Structures Ltd., the conservation, refurbishment, repair and adaptive reuse of the existing structures in Site 3 now include: -

- **Nos. 36 and 37 Henry Street:** Block 3A incorporates the existing buildings at Nos. 36 and 37 Henry Street, where the existing basement and four floors above are to be retained and upgraded. A new set-back level at 4th floor allows the original building to be read beneath. The hotel is then significantly set back into the northern end of Block 3B before rising to 9 storeys.
- **Nos. 39 and 40 Henry Street:** Within Block 3B the facades of Nos. 39 & 40 Henry Street are retained and restored at upper levels from 1st to 3rd floor. The new residential building is set back at 4th and 5th floor levels to allow the original facades to be read beneath.
- **Nos. 8 and 9 Moore Street:** At the north western corner of Block 3B it is proposed to incorporate the existing basement and 3 storey buildings at Nos. 8 – 9 Moore Street, including façades and internal walls and floors. An existing staircase to the rear of 8-9 Moore Street, currently serving ground and 1st floors will be extended to provide access to the upper floors.
- **Nos. 11 – 13 Henry Place:** Immediately adjoining Nos. 8 – 9 Moore Street, it is proposed to retain and restore the existing ground and 1st floor facades and the floor area at 1st floor level.



Figure 4.4: Extract from a First Floor Plan for 'Site 3' based on proposal c. February 2021 – Greater extent of No. 36 – 37 Henry Street retained as part of current 'Site 3' iteration.

Environmental Effects of the Final Proposed Development compared to Site 3 – Retention of Existing Fabric			
Environmental Factor	Headings Under which the Environmental Factors were assessed	Topic	Comparative Effect of preferred option
Population and Human Health		Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Biodiversity		Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u>

			No perceived additional adverse effects during construction / operational phase.
Land, Soil & Geology		Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Water	Surface Water	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Waste Water	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Water Supply	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Flood Risk	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Climate	Air Quality & Climate Change	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Sunlight / Daylight	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Air	Noise and Vibration	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Material Assets	Traffic and Transport	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Waste	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Landscape and Visual	Visual Impact	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Cultural Heritage	Architectural Heritage	Construction Phase Operational Phase	<u>Positive, significant and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Archaeological Heritage	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.

4.3.5.5 Site 4 – National Monument Extension

As part of Site 4 the subject of the concurrent Planning Application, works adjacent No. 17 Moore Street (part of the National Monument) were not originally to be included as part of the proposals.

The existing Ministerial Consent (Ref. C494) for extension to the National Monument was to be implemented by the Office of Public Works and the proposal for Site 4 would make the appropriate provisions to integrate with the consented proposal for the National Monument.

The Applicant has been engaging closely with the Department of Housing, Local Government & Heritage. In March 2020, the Applicant was requested to include the consented extension to the National Monument as part of the ‘Site 4’ proposal.

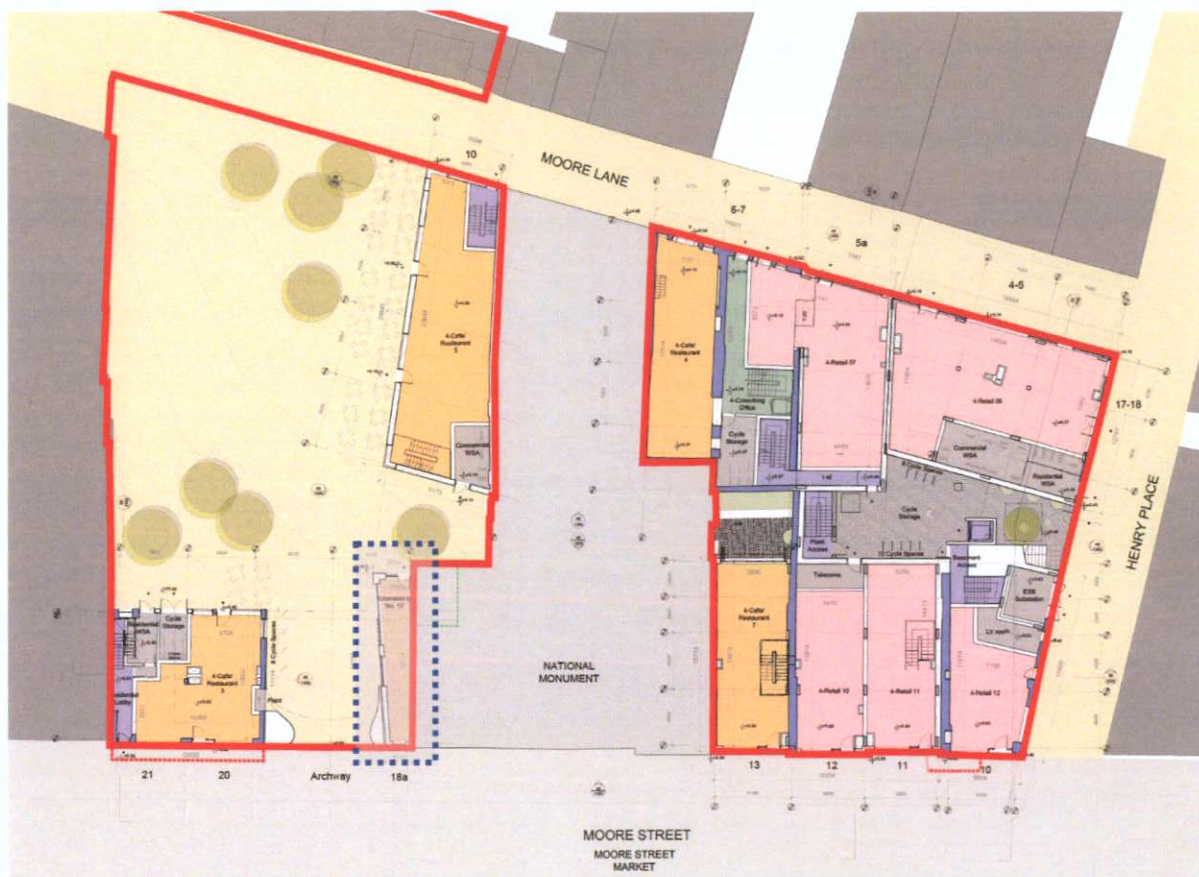


Figure 4.5: Layout for Site 4 with Extension to National Monument (No. 14 – 17 Moore Street) outlined by a blue dashed line – Overlay by SLA.

Site 4 will include as part of the Planning Application the previously approved extension of the National Monument under the Ministerial Consent within No. 18 Moore Street. No. 18 Moore Street lies outside of the National Monument. The Office of Public Works will be responsible for undertaking the balance of development already consented within the National Monument itself. The Applicant’s Design Team is continuing to liaise with the Office of Public Works and the Department of Housing, Local Government and Heritage. The proposed works around or in proximity to the National Monument will be addressed under the National Monuments Acts as required.

Environmental Effects of the Final Proposed Development compared to Site 4 – National Monument Extension			
Environmental Factor	Headings Under which the Environmental Factors were assessed	Topic	Comparative Effect of preferred option
Population and Human Health		Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Biodiversity		Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u>

			No perceived additional adverse effects during construction / operational phase.
Land, Soil & Geology		Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Water	Surface Water	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Waste Water	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Water Supply	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Flood Risk	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Climate	Air Quality & Climate Change	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Sunlight / Daylight	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Air	Noise and Vibration	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Material Assets	Traffic and Transport	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Waste	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Landscape and Visual	Visual Impact	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.
Cultural Heritage	Architectural Heritage	Construction Phase Operational Phase	<u>Positive, significant and permanent</u> No perceived additional adverse effects during construction / operational phase.
	Archaeological Heritage	Construction Phase Operational Phase	<u>Neutral, imperceptible and permanent</u> No perceived additional adverse effects during construction / operational phase.

4.3.5.6 Final Proposed Development

The final design of each of Site 3, Site 4 and Site 5 presents the most effective utilisation of this significant site, fulfils Dublin City Council objectives to deliver compact urban form (mix of uses on brownfield, underutilised, city centre lands), integrate built and cultural heritage where possible (protected and non-protected structures), and achieve socially inclusive communities (mix of uses including residential units, and safe and legible network of city streets). In the case of Site 5, the alternatives considered related primarily to the actual material and colour to be used in the treatment of the façade addressing the new civic square and are not considered as a main, or significant alternative design as a result.

To summarise it is considered that the final design of each Site: -

- Advances the strategic and statutory objectives applicable to these lands and the wider area.
- Optimises development space within the overall site, in an efficient and sustainable manner.
- Provides a range of uses including residential, hotel, retail, café restaurant and cultural in close proximity to existing public transport.
- Facilitates additional permeability within the urban block (Site 3).
- Avoids significant environmental impacts.
- Enables extensive economic development through both employment created at construction and operational stages, and also under future phases of development.
- Avoids the necessity to utilise in a non-sustainable manner other greenfield lands, particularly those in the Greater Dublin Area.
- Encourages the use of public transport and provides pedestrian and cycle links throughout and within the Masterplan to minimise car usage within the scheme.

The final iteration of the Sites is not considered to give rise to any significant adverse environmental impacts. Mitigation measures to be implemented at construction and operation stages of the project are summarised in Chapter 18: Summary of Mitigation Measures of the EIAR.

The designs for Site 1 and Sites 2AB and 2C are in ongoing discussions with Dublin City Council.

5 POPULATION & HUMAN HEALTH

5.1 INTRODUCTION

This chapter evaluates the impacts of the Dublin Central Masterplan and the Proposed Development (as defined in Chapter 3: Description of Proposed Development) on population and human health.

This chapter was prepared by Paul Conaghan an Environmental Consultant with AWN Consulting Ltd. Paul has over 9 years experience in environmental consulting and engineering and holds a BSc. in Environmental Science from the University of Limerick and a MSc in Environmental Engineering from Queens University Belfast. He is a specialist in geo-environmental assessment, assessment for human health in environmental impact assessment, hydrogeological assessment and contaminated land investigation Paul is a member of the International Association of Hydrogeologists (Irish Chapter).

In accordance with the *Draft Guidelines on the Information to be contained in Environmental Impact Assessment Reports* (EPA, 2017), and *Draft Advice Notes for Preparing Environmental Impact Statements* (EPA, 2015), this chapter has considered the “existence, activities and health of people” with respect to “topics which are manifested in the environment such as employment and housing areas, amenities, extended infrastructure or resource utilisation and associated emissions”. Risk of Major Accidents is covered in Chapter 17: Risk Management (Major Accidents & Disasters) of this Environmental Impact Assessment Report (EIAR). Issues examined in this chapter include: -

- Demography.
- Population.
- Employment.
- Social Infrastructure.
- Landscape, Amenity and Tourism.
- Natural Resources.
- Air Quality.
- Noise & Vibration.
- Material Assets.
- Traffic.
- Health and Safety.

Where these topics are dealt with in further detail elsewhere in this EIAR, the relevant chapters have been cross referenced in this chapter.

5.2 ASSESSMENT METHODOLOGY

In accordance with the *Draft Guidelines on the Information to be contained in Environmental Impact Assessment Reports* (EPA, 2017), this chapter has considered that: -

“in an EIAR the assessment of impacts on population and human health should refer to the assessment of those factors under which human health effects might occur, as addressed elsewhere in the EIAR e.g., under environmental factors of air, water soil etc”.

As per Article 3 of Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, as amended by Directive 2014/52/EU: -

“1) The environmental impact assessment shall identify, describe, and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors:-

- a) *population and human health;*

- b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;
- c) land, soil, water, air and climate;
- d) material assets, cultural heritage and the landscape;
- e) the interaction between the factors referred to in points (a) to (d).

2) The effects referred to in paragraph 1 on the factors set out therein shall include the expected effects deriving from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project concerned."

The 2017 publication by the European Commission (EC), *Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report*, considered that: -

"Human health is a very broad factor that would be highly Project dependent. The notion of human health should be considered in the context of the other factors in Article 3(1) of the EIA Directive and thus environmentally related health issues (such as health effects caused by the release of toxic substances to the environment, health risks arising from major hazards associated with the Project, effects caused by changes in disease vectors caused by the Project, changes in living conditions, effects on vulnerable groups, exposure to traffic noise or air pollutants) are obvious aspects to study. In addition, these would concern the commissioning, operation, and decommissioning of a Project in relation to workers on the Project and surrounding population."

This chapter will follow these EC guidelines and will examine the health effects relevant to the Proposed Development as they relate to a relevant, defined study area. The effects of the Proposed Development on the population and human health are analysed in compliance with the requirements of the EPA Guidelines.

5.2.1 Assessment of Significance & Sensitivity

The assessment of significance is a professional appraisal based on the sensitivity of the receptor and the magnitude of the effect.

Within any area, the sensitivity of individuals in a population will vary. As such, it would be neither representative of the population, nor a fair representation of the range of sensitivities in a population was an overall sensitivity classification assigned to the population in question. As such, the precautionary principle has been adopted for this assessment, which assumes that the population within the study area is of a uniformly high sensitivity.

5.2.2 Magnitude of Impact

The magnitude of predicted impacts has been quantified in this assessment using the terms outlined in Table 5.1 below.

Magnitude	Description of Magnitude
High	Change in an environmental and/or socio-economic factor(s) as a result of the Proposed Development which would result in a major change to existing baseline conditions (adverse or beneficial)
Medium	Change in an environmental and/or socio-economic factor(s) as a result of the Proposed Development which would result in a moderate change to existing baseline conditions (adverse or beneficial)
Low	Change in an environmental and/or socio-economic factor(s) as a result of the Proposed Development which would result in a minor change to existing baseline conditions (adverse or beneficial)
Negligible	Change in an environmental and/or socio-economic factor(s) as a result of the Proposed Development which would not result in change to existing baseline conditions at a population level, but may still result in an individual impact (adverse or beneficial)

No change	No change would occur as a result of the Proposed Development which would alter the exiting baseline conditions (adverse or beneficial)
-----------	---

Table 5.1: Description of magnitude of predicted impacts.

5.2.3 Significance of Effects

The assessment of significant effects in this assessment is a professional appraisal and has been based on the relationship between the magnitude of effects (Section 5.2.2) and the sensitivity of the receptor. Table 5.2 below provides a matrix on the measure of the significance of effects as determined by the relationship between the magnitude of impact and the sensitivity of receptors

		Magnitude of Impact			
		Negligible	Low	Medium	High
Sensitivity of Receptor	Negligible	Negligible	Negligible or minor	Negligible or minor	Minor
	Low	Negligible or minor	Negligible or minor	Minor	Minor or moderate
	Medium	Negligible or minor	Minor	Moderate	Moderate or major
	High	Minor	Minor or moderate	Moderate or major	Major

Table 5.2: Significance of effects and the sensitivity of the receptor.

5.2.4 Study Area

The Dublin Central Masterplan area is located within Dublin City centre. The Dublin Central Masterplan consists of a mixed-use development at the heart of Dublin City Centre and associated public realm, contributing towards the enhancement of Dublin City. The O’Connell Street Metrolink stop (being delivered separately by Transport Infrastructure Ireland – TII) will create a transport interchange. As such, the key population catchments (study areas) to consider are the ‘City Area’ and the ‘ED Area’. The Dublin Central Masterplan area adjoins the existing O’Connell Street, Moore Street, Parnell Street and Henry Street. The area selected for the assessment of the impact on human health has been defined as the Electoral Divisions (ED) of North City (ED 02075) Rotunda B (02089), Rotunda A (02088), Mountjoy A (02073), Mansion House A (02117), Royal Exchange A (02144), and North Dock C (02078). These areas have been considered in this chapter to provide a representative overview of the area within which the site is located. Therefore, the assessment in this chapter will apply to both the Dublin Central Masterplan area and the Proposed Development (Site 3, 4 & 5).

DCC PLAN NO 2862/21
RECEIVED: 01/06/2021

5.2.4.1 City Area

The subject site is located centrally within the Dublin City area, which is within the administrative area of Dublin City Council. As per the Dublin City Development Plan (2016 – 2022), Dublin City is zoned as objective Z5 – “To consolidate and facilitate the development of the central area and to identify, reinforce, strengthen and protect its civic design character and dignity” (Figure 5.1).



Figure 5.1: Zoning Map of Dublin City Central Area.

The site is located within the Dublin region, as defined by the Nomenclature of Territorial Units for Statistics (NUTS) developed by Eurostat. The Dublin region comprises counties Dublin City, Dun Laoghaire-Rathdown, Fingal and South Dublin.

5.3 RECEIVING ENVIRONMENT

5.3.1 Population & Demographics

5.3.1.1 Population

The most recent census of the population was carried out by the Central Statistics Office (CSO) on the 24 April 2016, and the previous census on the 10 April 2011. The census compiles data for the whole state as well as smaller individual areas including counties, cities, towns, and electoral divisions. Taking into consideration the location of the Dublin Central Masterplan, the census information on population, age profile, employment, and social class, has been analysed in relation to the development site.

Table 5.3 denotes the population change at for the state, and electoral districts for the census years 2011 and 2016. The latest census data shows that the population surrounding the development site increased in size by 5.8% between the years 2011 and 2016 compared with 3.8% nationally. The average rate of population growth across the study area was an increase in 5.5%. The general increase in growth rate of surrounding areas, when compared to the state figures, suggests the increasing economic role of the areas surrounding the Proposed Development site.

Area	2011	2016	% Change 2011 – 2016
State	4,588,252	4,761,865	+3.8%
North City	5,345	5,654	+5.8%
Rotunda B	2,439	2,458	+0.8%
Rotunda A	4,698	5,965	+26.9%

Area	2011	2016	% Change 2011 – 2016
Mountjoy A	5,326	5,389	+1.2%
Mansion House A	4,347	4,665	+7.3%
Royal Exchange A	4,481	4,329	-3.4%
North Dock C	4,345	4,214	-3.0%
Study Area (Mean)	4,425	4,667	+5.5%

Table 5.3: Population change 2011 – 2016 (Source: www.cso.ie).

5.3.1.2 Age Profile

The age profile of the population in the area is an important parameter as it provides a good insight into the potential labour force, the demand for schools, amenities, other facilities, and the future housing demand. Table 5.4 shows the age profiles at a national level and electoral districts for the census year 2016.

Age	0 – 12	13 – 18	19 – 24	25 – 44	45 – 64	65+	Total Persons
State	18.48%	7.80%	6.96%	29.53%	23.84%	13.39%	4,761,865
North City	7.9%	2.6%	10.8%	55.9%	16.6%	6.1%	5,654
Rotunda B	9.8%	1.8%	11.1%	57.1%	15.9%	4.3%	2,458
Rotunda A	10.5%	4.1%	10.9%	47.8%	19.9%	6.8%	5,965
Mountjoy A	10.4%	6.3%	13.7%	47.5%	16.8%	5.3%	5,389
Mansion House A	8.9%	9.2%	18.1%	37.7%	17.1%	8.9%	4,665
Royal Exchange A	3.2%	4.2%	16.7%	44.8%	22.8%	8.2%	4,329
North Dock C	8.4%	4.2%	14.0%	47.8%	19.0%	6.6%	4,214
Study Area (mean)	8.5%	4.8%	13.6%	48%	18.4%	6.7%	4,667.7

Table 5.4: Age profile 2016 (Source: www.cso.ie).

This table shows that both nationally and in the study area, the dominant age grouping is 25 – 44 at 29.53% and 48% of the total population, respectively. This also reflects that the overall labour force population (12 – 64 age group) in the study area is reflective of the national level. This is in keeping with census data from 2011 and 2006.

5.3.2 Socioeconomics

5.3.2.1 Employment

Table 5.5 presents the employment statistics nationally and at the county level in 2016 compared with 2011. The data shows that unemployment decreased significantly in the county, as well as nationally, reflecting the economic recovery in recent years.

	At Work	Looking for first regular job	Unemployed having lost or given up previous job	Total in labour force	% Unemployment
2011 Labour Force					
State	1,807,360	34,166	390,677	2,232,203	19.03%
North City	2,938	112	369	3,419	14.1%
Rotunda B	2,095	72	527	2,694	22.2%
Rotunda A	1,261	42	294	1,597	21.0%
Mountjoy A	2,304	119	677	3,100	25.7%
Mansion House A	1,883	61	365	2,309	18.4%
Royal Exchange A	2,311	49	330	2,690	14.1%
North Dock C	2,015	53	548	2,616	23%
2016 Labour Force					
State	2,006,641	31,434	265,962	2,304,037	12.91%
North City	3,496	86	382	3,964	11.8%
Rotunda B	1,404	30	217	1,651	15%
Rotunda A	3,231	86	503	3,820	15.4%
Mountjoy A	2,819	91	526	3,436	17.9%
Mansion House A	2,227	52	296	2,575	13.5%
Royal Exchange A	2,642	38	214	2,894	8.7%
North Dock C	2,284	41	383	2,708	15.6%

Table 5.5: Employment statistics 2011 and 2016 (Source: www.cso.ie).

The 2016 census data shows that the percentage of unemployed has decreased for the State and the area surrounding the Dublin Central Masterplan area and the Proposed Development (Site 3, 4 & 5) since the 2011 census.

5.3.2.2 Education

Census data presenting the highest level of education completed for key educational levels by people living in the county and the area surrounding the development site is presented in Table 5.6. The table presents key milestones in education and ignores people undertaking other studies or where information was not stated.

Area	No Formal Education	Primary Education	Secondary ¹	Higher Education ²	Undergraduate Degree ³	Postgraduate Degree ⁴	Total Persons
Highest Level of Education in 2011							

¹ Lower secondary and Upper secondary

² Higher Certificate, Advanced certificate/completed apprenticeship or Technical/vocational training

³ Ordinary bachelor's degree, Honours bachelor's degree/professional qualification

⁴ Postgraduate degree or Ph.D

Area	No Formal Education	Primary Education	Secondary ¹	Higher Education ²	Undergraduate Degree ³	Postgraduate Degree ⁴	Total Persons
Dublin City	4,635	56,817	109,746	50,898	67,398	46,007	335,501
North City	28	140	574	529	790	530	2,591
Rotunda B	23	118	353	239	352	203	1,288
Rotunda A	38	257	692	431	422	287	2,127
Mountjoy A	56	483	722	455	474	291	2,481
Mansion House A	31	468	623	277	466	521	2,386
Royal Exchange A	26	221	415	343	582	450	2,037
North Dock C	46	413	608	328	573	425	2,393
Highest Level of Education in 2016							
Dublin City	5,807	43,102	100,278	53,536	77,803	58,960	339,486
North City	32	104	531	445	835	584	2,531
Rotunda B	29	102	213	216	344	254	1,158
Rotunda A	62	265	896	578	678	378	2,857
Mountjoy A	78	331	706	455	514	353	2,437
Mansion House A	48	343	574	339	568	548	2,420
Royal Exchange A	37	146	333	303	603	485	1,907
North Dock C	67	388	496	277	569	521	2,318

Table 5.6: Highest level of education in 2011 and 2016 (Source: www.cso.ie).

5.3.2.3 Labour Force Survey

The Labour Force Survey (LFS) is a large-scale, nationwide survey of households in Ireland carried out every three months. It generates labour force estimates which include the official measure of employment and unemployment for the state.

The LFS results nationally for Q4 2020 showed that there were 2,306,200no. people employed in the state with 468,655no. people registered as unemployed (aged 15 – 64 years). In Q4 2020, the majority of people were employed in the broad occupations of ‘professionals’ or as ‘skilled trade’.

It is important to note that the effects of COVID-19 on the labour market in the results from the Labour Force Survey (LFS) in Quarter 4 (Q4) 2020. The results reflect some of the economic impacts of the COVID-19 situation. The LFS estimates that 607,190no. people will be unemployed by the end of Q1 2020 (www.cso.ie, 2020).

5.3.2.4 Income

The below data in Table 5.7 is obtained from CSO Statbank (CIA02), this demonstrates the levels of total income and disposable income per person in the Dublin area are 15 – 20% higher over the study years than the State in 2017.

A similar pattern of income distribution is observed in data on disposable income per person.

The below data in Table 5.7 is obtained from CSO Statbank (CIA02), this demonstrates the levels of total income and disposable income per person in the Dublin area are 15 – 20% higher over the study years than the State in 2017.

A similar pattern of income distribution is observed in data on disposable income per person.

Area	Income	2015	2016	2017
State	Total Income per Person (€)	26,857	27,753	29,239
	Disposable Income per Person (€)	18,854	19,660	20,714
Dublin	Total Income per Person (€)	32,750	34,099	35,197
	Disposable Income per Person (€)	21,832	23,005	23,864

Table 5.7: Income per Person (Source: CSO Statbank CIA02).

5.3.2.5 Deprivation

Deprivation in small areas is mapped using the Pobal HP Deprivation Index. This Index draws on data from censuses and combines three dimensions of relative affluence and deprivation: Demographic Profile, Social Class Composition and Labour Market Situation. Figure 5.2 below shows a graphical representation of how the concepts of Demographic Growth, Social Class Composition and Labour Market Situation are measured by ten key socio-economic indicators from the Census of Population. In this EIA Report, the Relative Index Score is considered as the measure for deprivation, as these Relative Index Scores are rescaled such that the mean is 0 and the standard deviation is 10 at each census wave. This allows for the provision of descriptive labels with the scores, which are grouped by standard deviation as seen in Table 5.8 below.

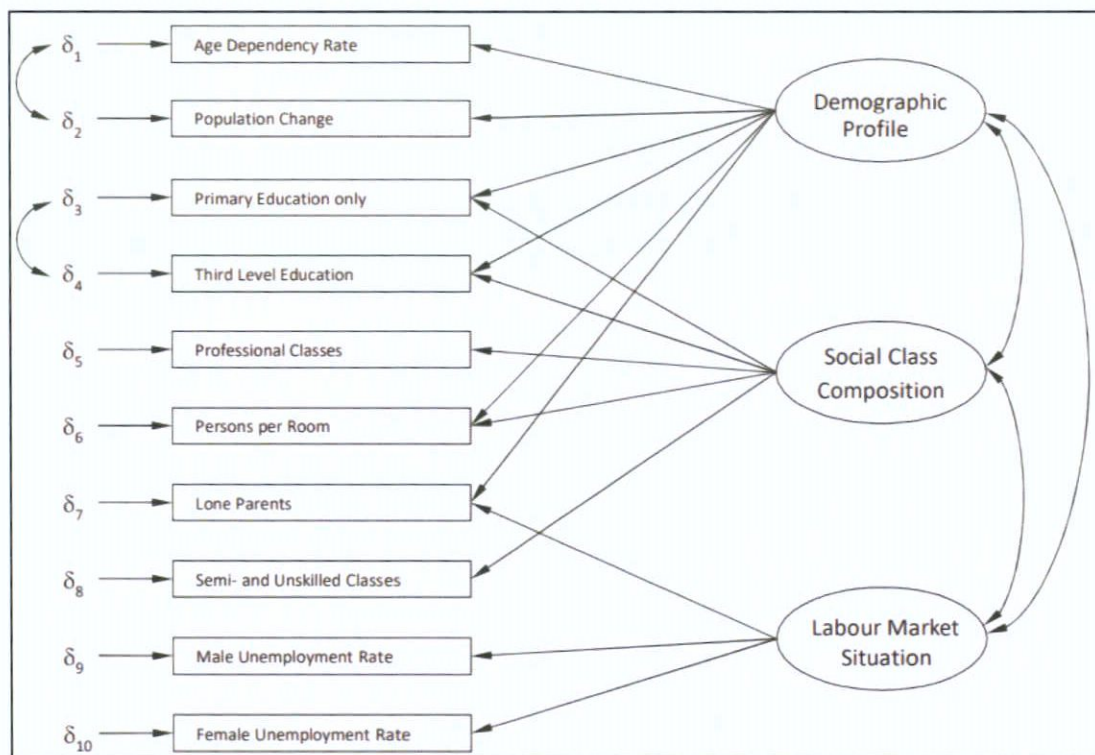


Figure 5.2: Basic Model of the Pobal HP Deprivation Index.

Graphical representation of how the concepts of Demographic Growth, Social Class Composition and Labour Market Situation are measured by ten key socio-economic indicators from the Census of Population.

Relative Index Score	Standard Deviation	Label
> 30	> 3	Extremely affluent
20 – 30	2 – 3	Very affluent
10 – 20	1 – 2	Affluent

Relative Index Score	Standard Deviation	Label
0 – 10	0 – 1	Marginally above average
0 – -10	0 – -1	Marginally below average
-10 – -20	-1 – -2	Disadvantaged
-20 – -30	-2 – -3	Very disadvantaged
< -30	< -3	Extremely disadvantaged

Table 5.8: Pobal HP Index Relevant Index Score labels (Source: Pobal HP Deprivation Index).

The data in Table 5.9 shows the Pobal HP Index Relevant Index Score Figures at a local and County level (Source: Pobal HP Deprivation Index). These figures show that the population living within the Study Area are generally classified as ‘Marginally above average’ and ‘Affluent’. The county of Dublin is classified as ‘Marginally above average’ for the year 2011. Figure 5.3 below presents the Pobal HP Index map illustrating the Study Area.

Area	Relative Index Score	Pobal HP Description 2011
Dublin County	3.74	Marginally above average
North City	14.97	Affluent
Rotunda B	8.95	Marginally above average
Rotunda A	3.64	Marginally below average
Mountjoy A	2.60	Marginally above average
Mansion House A	4.62	Marginally above average
Royal Exchange A	13.79	Affluent
North Dock C	4.61	Marginally above average

Table 5.9: Pobal HP Index Relevant Index (Source: Pobal HP Deprivation Index).

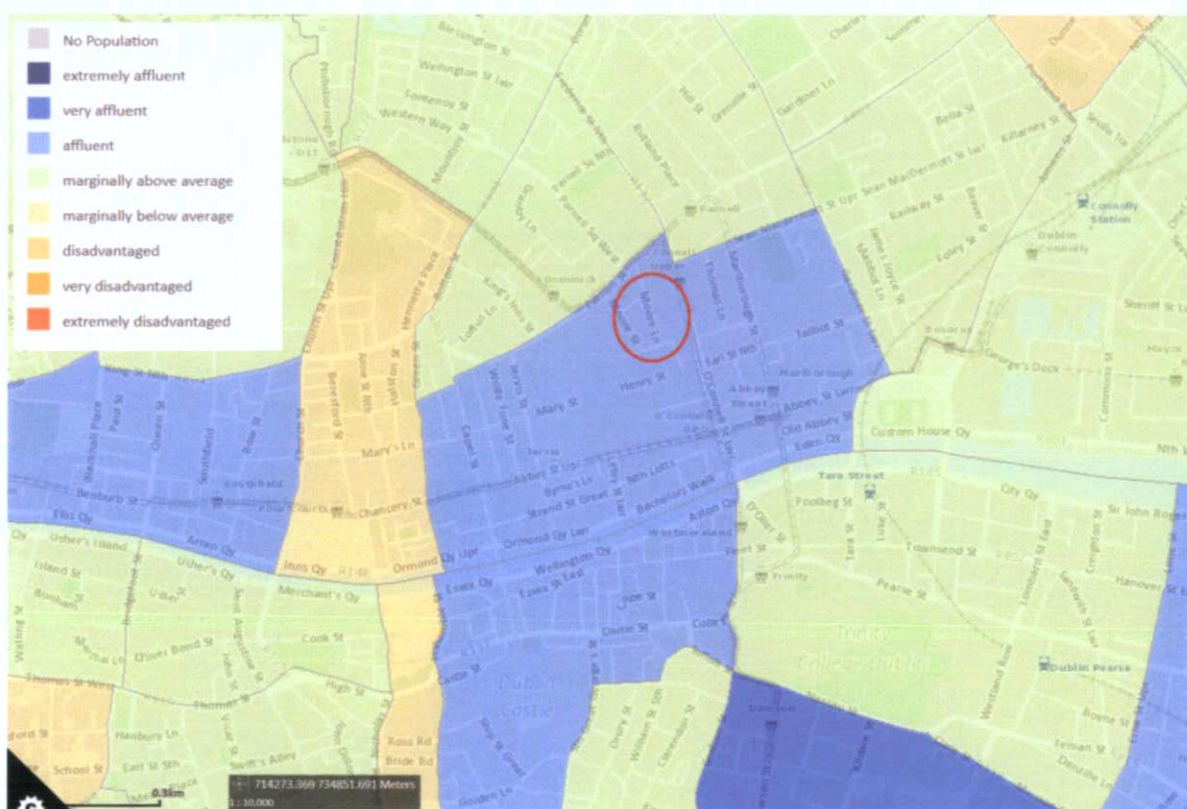


Figure 5.3: Pobal HP Index Electoral Division, Site is indicated with a red dot (Source: Pobal HP Deprivation Index).

5.3.3 Health

5.3.3.1 Physical Health

Life expectancy in Ireland by sex is a key metric for assessing population health; data for the study area is shown in Table 5.10. Dublin data shows that life expectancy for both males and females has increased consistently, with female life expectancy consistently higher than male.

Period Life Expectancy in Dublin by Sex					
Area	Sex	2002	2006	2011	2016
Dublin	Male	75.2	76.7	78.3	80.1
	Female	80.2	81.2	82.7	83.4

Table 5.10: Period Life Expectancy (Source: CSO Statbank VSA30 & VSA31).

Table 5.11 shows Circulatory Diseases Admission Rate per 100,000 Population at a National and County level (Source: Public Health Well Community Profiles). The rate of hospital admissions in Dublin City tends to generally fall in line with that of the State for all study years.

Circulatory Diseases Admission Rate per 100,000 Population					
Area	2010	2011	2013	2014	2015
State	4,308.6	4,026.8	4,495.6	4,644.6	3,794.9
Dublin City	3,805.56	3,498.7	3,950.4	4,716.7	3,425.8

Table 5.11: Circulatory Diseases (Source: Public Health Well Community Profiles).

Respiratory Diseases Admission Rate per 100,000 Population at a National and County level are shown in Table 5.12. The rate of hospital admissions in Dublin City tends to generally fall in line with that of the State for all study years.

Respiratory Diseases Admission Rate per 100,000 Population					
Area	2010	2011	2013	2014	2015
State	2,402.6	2,361.0	2,633.6	2,691.0	2,712.5
Dublin City	2,483.7	2,349.7	2,585.7	2,693.7	2,597.9

Table 5.12: Respiratory Diseases (Source: Public Health Well Community Profiles).

With respect to mental health the rates of death by suicide and intentional self-harm rate per 100,000 population is shown in Table 5.13 below. The rate in Dublin is overall lower over the study years compared with those in the State. The rate of death by suicide and intentional self-harm are generally decreasing year-on-year, this is generally in line with the pattern seen in the State.

Death by Suicide and Intentional Self Harm Rate per 100,000 Population				
Area	2010	2011	2012	2013
State	10.87	12.11	11.8	10.34
Dublin City	8.42	9.01	8.63	7.45

Table 5.13: Death by Suicide and Intentional Self Harm (Source: CSO Statbank DHA12).

The number of admissions to hospital for anxiety or depression per 1,000 people (Table 5.14) in Dublin City have followed the same pattern of the State, which shows a decline from 2013 to 2014. However, there was a steep incline in 2015 which occurred in Dublin City but did not occur for the overall State (Table 5.14).

Number of Admissions to Hospital for Anxiety or Depression Per 1,000 People			
Area	2013	2014	2015
State	2	1.8	1.8
Dublin City	2	1.4	24.9

Table 5.14: Number of admissions to hospital for anxiety or depression (Source: Public Health Well Community Profiles).

5.3.4 Social Infrastructure

5.3.4.1 Residential Dwellings

Currently, the Dublin Central Masterplan area has little to no residential units present. The nearest existing residential units to the Dublin Central Masterplan area are those located at Greeg Court Apartments, to the northwest of the site boundary, and Jurys Inn Hotel Parnell Street and Lynams Hotel, which are located beyond the north and east boundaries respectively. Other hotels in close proximity to the eastern site boundary are Holiday Inn Express and The Gresham Hotel on O'Connell Street.

As the site is centrally located within Dublin City centre there are a large number of commercial premises in close proximity including Henry Street to the South, and the nearby Jervis and Ilac Shopping Centres.

5.3.4.2 Schools

The area is well served by educational institutions. There are a number of primary and secondary schools in the vicinity of the Dublin Central Masterplan area including: -

- Central Model Infant School – c. 214m east of the site.
- Rutland National School – c. 500m east of the site.
- St. Marys Primary School – c. 570m north west of the site.
- Central Model Senior School – c. 370m east of the site.
- Mount Carmel Secondary School – c. 470m to the north west of the site.
- St. Pauls Secondary School – c. 500m west of the site.

The closest third level institutions in the area include Trinity College Dublin (c. 500 m to the south east), IBAT College Dublin (c. 621m to the south west) and the National College of Art and Design (c. 1.3 km to the south west).

5.3.4.3 Health

The nearest hospital to the site is the Rotunda Hospital located c. 230m to the north of the site. Talbot Street and Jervis Street Medical Centres are located c. 350m to the east and west of the Dublin Central Masterplan area respectively.

5.3.4.4 Security

The O'Connell Street Garda Station is located c. 60 metres to the north with Store Street Garda Station located c. 640 m to the east of the Dublin Central Masterplan area.

5.3.5 Landscape Amenity and Tourism

In terms of landscape amenity of the Dublin Central Masterplan area, there are no listed or scenic views, no landscape or amenity designations or protected trees pertaining to the site. There are a number of protected structures listed on the Sites and Monuments Record (SMR) in the Dublin City Centre area. 'Site 4' bounds No. 14 – 17 Moore Street (DU018-390) to the north and south. An historical Brickworks site is located to the north east of the Dublin Central Masterplan area on Moore Lane (DUB018-020506) – See Chapter 16 – Cultural History (Archaeological).

The primary areas of landscape amenity in the immediate vicinity of the Dublin Central Masterplan area are Mountjoy Square Park (c. 620 m to the north east) and Kings Inn Park (c. 700 m to the north west), which are all small recreational parks. Primary amenity areas such as Stephen's Green Park, Dublin Bay and the Phoenix Park are located c. 1.4 km to the south, 4 km to the south east and c. 2.3 km west of the Dublin Central Masterplan area, respectively.

The Dublin Central Masterplan area is not considered to be significant or sensitive from a natural landscape aspect due to its city central location. The lands are appropriately zoned in the Dublin City Development Plan 2016 – 2022 as Z5 – *"To consolidate and facilitate the development of the central area, and to identify, reinforce, strengthen and protect its civic design character and dignity"*. The immediate surrounding area is contained within an environment of an established city centre setting.

Tourism is a major industry in the immediate environs of the Dublin Central Masterplan area; with the General Post Office, O'Connell Street, Moore Street bounding the site. Section 16.5.3 of the Dublin City Development Plan lists a number of policy's to promote and facilitate tourism in the city centre area. A number of hotels are located in and around the Dublin Central Masterplan area including Jury's Inn Parnell Street bounding the site to the north, and the Gresham Hotel c. 20 metres to the east. A further hotel is presently under construction at the junction of Parnell Street and Moore Lane.

5.3.6 Natural Resources

Natural resources and land use in the hinterland of the Dublin Central Masterplan area have also been considered as they may have implications for the development of the lands.

The site is within the historical centre of Dublin City. Historical Ordnance Survey (OS) maps indicate that much of the surrounding land has been in a similar use for over 200 years.

Data from the Geological Survey of Ireland indicates that there are no areas of geological heritage within the vicinity of the proposed site. In terms of extractive industries, the closest active quarries are the Huntstown Quarry in Finglas (c. 7.4 km north west of the site) and the Belgard Quarry in West Dublin (c. 10.5 km south west of the site), both of which are operated by Roadstone Ltd. There are no anticipated impacts on these facilities from the Dublin Central Masterplan or Proposed Development. Further detail on extractive industries is presented in Chapter 7: Land, Soils & Geology.

5.4 CHARACTERISTICS OF PROPOSED DEVELOPMENT

5.4.1 Dublin Central Masterplan

The Dublin Central Masterplan incorporates a large urban block located on the north side of the River Liffey. The Dublin Central Masterplan comprises c. 2.2 Ha and is bounded by Parnell Street on the north, Moore Street on the west, O'Connell Street Upper on the east and Henry Street on the south. Other streets within the block include Moore Lane, O'Rahilly Parade and Henry Place. It lies within St. Mark's Parish and is in the Dublin North City Ward.

A detailed description of the Dublin Central Masterplan site context, including its interface with the underground Metrolink Station (to be implemented by TII should consent be granted for the scheme) is presented in Chapter 3: Description of Proposed Development.

5.4.2 Proposed Development – Site 3, 4 & 5

The Proposed Development comprises a mixed-use scheme incorporating office, retail, hotel, residential uses, café / restaurant uses and landscaping, including new public realm. Its development has been guided by the Dublin Central Masterplan which will consist of at least six separate sites.

A detailed description of the Proposed Development site context is presented in Chapter 3: Description of Proposed Development.

5.5 POTENTIAL IMPACTS

5.5.1 Dublin Central Masterplan

The impact of construction, commissioning, operation and decommissioning of the Dublin Central Masterplan is considered below. As the study area is based on Local Electoral Districts the impacts and mitigation measures for both the Dublin Central Masterplan and the Proposed Development (Site 3, 4 & 5) will be similar or identical for some of the criteria listed.

5.5.1.1 Construction Stage

5.5.1.1.1 Impacts on Business and Residences

The main potential impacts on local businesses and residences associated with the Proposed Dublin Central Masterplan Development will be in relation to air quality, noise/vibration, visual impact and traffic. The potential impacts and mitigation measures to address them are dealt with within the corresponding chapters of this EIAR as follows: -

- Chapter 9: Climate (Air Quality and Climate Change).
- Chapter 10: Climate (Sunlight & Daylight).
- Chapter 11: Air (Noise & Vibration).
- Chapter 12: Landscape and Visual Impact.
- Chapter 13: Material Assets (Transportation).

It is predicted that there will be a slight positive impact on local business activity during the construction phase with the increased presence of up to 400no. construction workers using local facilities. It is also believed there will be a long-term positive impact during the operational phase due to the residential aspect of the scheme and the increase in people requiring the use of the City Centre facilities.

There may be a short term slight negative impact on the local residential population during the construction phase and the operational phase, as well as the potential additional housing demand in the wider commuter area as a result of increased employment provided by the development of the Dublin Central Masterplan. It is also anticipated that the Dublin Central Masterplan will have indirect positive effects on employment in terms of construction material manufacture, maintenance contracts, equipment supply, landscaping etc.

The potential increase in the temporary population of the area during construction as a result of the employment of workers from outside the wider Dublin area that may choose to reside in the immediate and wider local area is likely to amount to only a small percentage of the workforce employed during the construction phase but will result in some additional trade for local accommodation and services. It is expected that the majority of the work force will travel from

existing places of residence to the construction site rather than reside in the immediate environs of the site. However, some local employment from within the wider local area is expected.

Construction will have an indirect positive effect on support industries such as builder suppliers, construction material manufacture, maintenance contracts, equipment supply, landscaping and other local services. There will also be a need to bring in specialist workers on a regular basis that may increase the above estimated working population at times. Specialists are only likely to stay for shorter periods depending on the nature of the work. The construction phase, therefore, is considered to have the potential to have a **moderate short to medium term positive impact** on the economy and employment of the local and wider area.

The completed development will also have a **positive impact** in the provision of additional capacity for residential units in the city centre, the demand for which remains high due to the current nationwide housing crisis.

5.5.1.1.2 Impact on Human Health from Air Quality

As outlined in Chapter 9: Climate (Air Quality & Climate Change), National and European statutory bodies have set limit values in ambient air for a range of air pollutants. These limit values or "Air Quality Standards" are based on the protection of the environment as well as the protection of human health. Additional factors such as natural background levels, environmental conditions and socio-economic factors are also considered in the limit values which are set (see Chapter 9: Climate (Air Quality & Climate Change, Table 9.1). The ambient air quality standards established are designed to minimise harmful effects to health.

Dust emissions from the demolition and construction phase of the Proposed Development have the potential to impact human health through the release of PM₁₀ and PM_{2.5} emissions. As per Table 9.6 of Chapter 9: Climate (Air Quality & Climate Change) the surrounding area is considered of low sensitivity to significant dust related human health impacts. There is an overall medium risk of human health impacts as a result of the demolition and construction works from the Dublin Central Masterplan (see Table 9.17 of Chapter 9: Climate (Air Quality & Climate Change). Therefore, in the absence of mitigation there is the potential for **slight, negative, short-term** impacts to human health as a result of implementation of the Dublin Central Masterplan.

Traffic emissions from construction vehicles also have the potential to impact human health. However, as per section 9.4.2.1.1 of Chapter 9: Climate (Air Quality & Climate Change) the change in local air quality as a result of construction traffic is considered **short-term, localised, negative** and **imperceptible**.

5.5.1.1.3 Impact on Human Health from Noise & Vibration

Noise and vibration impacts associated with the Dublin Central Masterplan have been fully considered within Chapter 11: Air (Noise & Vibration). Commentary on the impact assessment and related noise levels are summarised below with respect to potential environmental health impacts.

As detailed in Chapter 11: Air (Noise & Vibration), there will be some impact on nearby noise sensitive properties due to noise emissions from site activity and traffic. The application of noise limits and limits on the hours of operation, along with implementation of appropriate noise and vibration control measures, will ensure that noise and vibration impact is kept to a minimum. In addition, due to the distance between the site and the nearest sensitive locations, vibration impacts generated during construction are expected to be negligible. Therefore, it is expected in the absence of specific mitigation measures that there will be a **neutral, not significant** and **temporary** impact at the closest receptors.

5.5.1.1.4 Impact on Local Amenities and Tourism

There are no listed or scenic views, no landscape or amenity designations or protected trees pertaining to the site, There are a number of protected structures listed on the Sites and Monuments Record (SMR) in the Dublin City Centre area. Directly to the west bounding the site is 14-17 Moore Street (DU018-390) which is bounded by the Dublin Central Masterplan boundary. A historical Brickworks site is located to the north east of the site on Moore Lane (DUB018-020506). These will be protected and not impacted by the proposed construction and demolition works.

During construction and demolition works there may be a **neutral, slight** and **short-term impact** on the surrounding tourist attraction of the GPO to the south and north O'Connell Street due to works. There will be no impacts to the nearby park amenities identified above.

The implementation of the Dublin Central Masterplan will create a wastewater discharge but will not have an impact on local amenities or the local population.

5.5.1.1.5 Impact on Material Assets

The implementation of the Dublin Central Masterplan will require electrical power supply from the national grid. An Energy & Sustainability Statement, prepared by BDP M&E Consulting Engineers is available for each Site.

5.5.1.1.6 Impacts from Additional Traffic

An assessment of the additional traffic movements associated with the implementation of the Dublin Central Masterplan during the construction and operational phases is presented in Chapter 13: Material Assets (Transportation).

As stated in Section 13.5.1.1.16 of Chapter 13: Material Assets (Transportation), the increase in traffic volumes, the reduction in the width or local carriageways, reduction in width of select pathways etc. associated with the construction and demolition phase would lead to a likely **slight, negative** and **short-term** impact.

5.5.1.1.7 Impacts from Unplanned Events/ Impacts on Health and Safety

The Dublin Central Masterplan has been designed in accordance with the Safety, Health and Welfare at Work Act 2005 (S.I. 10 of 2005) as amended and the Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. 299 of 2007) as amended and associated regulations. The plant has been designed by skilled personnel in accordance with internationally recognised standards, design codes, legislation, good practice and experience based on a number of similar existing facilities operated by the operator.

The implementation of the Dublin Central Masterplan has the potential for an impact on the health and safety of workers employed on the site, particularly during the construction phase. The activities of contractors during the construction phase will be carried out in accordance with the Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. No. 291 of 2013) as amended to minimise the likelihood of any impacts on worker's health and safety. The health and safety planning for the construction phase of the Proposed Dublin Central Masterplan Development will consider any appropriate measures to safeguard workers' health and safety with regards to Covid-19.

During the operational phase of the implementation of the Dublin Central Masterplan, the operator will implement an Environmental Safety and Health (EH&S) Management System and associated procedures at the facility. Full training in the EH&S Management System and relevant procedures will be provided to all employees. The Operator will also implement any appropriate health and safety measures to safeguard workers' health and safety with regards to Covid-19.

The 2014 EIA Directive, 2018 EIA Regulations and associated EPA Draft EIA Report Guidelines 2017 require that the vulnerability of the project to major accidents and / or natural disasters (such as flooding, sea level rise etc.) is considered in Chapter 17: Risk Management (Major Accidents & Disasters).

The Dublin Central Masterplan area has been assessed in relation to sea level rise / flooding as outlined below. The potential for major accidents to occur at the facility has also been considered with reference to Seveso / Control of Major Accident Hazards (COMAH) Regulations. See Chapter 17: Risk Management (Major Accidents & Disasters) for more details.

There is a negligible risk of landslides occurring at the site and in the immediate vicinity due to the topography and soil profile of the site and surrounding areas. There is no history of seismic activity in the vicinity of the site. There are no active volcanoes in Ireland so there is no risk of volcanic activity.

The potential risk of flooding on the site was also assessed. A site-specific flood risk assessment was carried out by the project engineers, Waterman Moylan and it was concluded that there is an extremely low to low residual risk of flooding. Furthermore, the Dublin Central Masterplan has been designed to provide adequate attenuation etc. to ensure there is no potential impact on flood risk for other neighbouring properties, nor is the site at risk from sea level rise.

The implementation of the Dublin Central Masterplan will not be a Seveso / COMAH facility. The only substance stored on site controlled under Seveso / COMAH will be diesel for generators and the amounts proposed do not exceed the relevant thresholds of the Seveso Directive. The Dublin Central Masterplan area is not located within the consultation distance of any COMAH establishment that is notified to the Health and Safety Authority (HSA).

There is a potential impact on the receiving environment as a result of minor accidents / leaks of fuel / oils during the construction and operational phases. However, the implementation of the mitigation measures set out in Chapter 7: Land, Soils & Geology and Chapter 8: Water of the EIAR will ensure the risk of a minor / accident is low and that the residual effect on the environment is imperceptible.

5.5.1.2 Operational Stage

5.5.1.2.1 Impacts on Business and Residences

The implementation of the Dublin Central Masterplan will result in significant and positive impact to local residents in the area. There will be a varied mix of residential and employment opportunities provided which will be of direct benefit, allowing a diverse range of community to work, and live within the city centre.

The implementation of the Dublin Central Masterplan will result in increased employment during the operational phase and will significantly reduce the pressure on local housing supply. The provision of residential units will benefit the adjacent businesses.

As stated in Chapter 10 Climate: Sunlight & Daylight, the BRE 209 guideline recommends that in all relevant amenity spaces; at least half of the area should receive at least two hours of sunlight on 21st March. The implementation of the Dublin Central Masterplan will have a slight overshadowing impact on the new 'Site 4' amenity space. The residential amenity space within 'Site 4' is at 1st floor level in a courtyard and receives at least 2 hours of direct sunlight on over 80% of the designated amenity area for residents (see figure 10.12 of Chapter 10: Climate (Sunlight & Daylight)). It is clear that residents will receive high levels of sunlight and the BRE 209 guidelines are met. The analysis carried out in Chapter 10: Sunlight & Daylight demonstrates that the design of Dublin Central Masterplan maximises access to sunlight in amenity spaces for both residents and the public and so the BRE 209 guidelines are easily achieved.

The extent of the impact of a development is usually proportional to the extent to which that development is large in scale and / or height and its proximity to the location. This proportionality may be modified by the extent to which the development is seen as culturally or socially acceptable, and on the interaction between the Proposed Development, the character of the existing shadow environment and the land use pattern of the receiving environment.

The impact of the implementation of the Dublin Central Masterplan on sunlight access to the adjacent properties is therefore defined as **Not Significant**: An effect which causes noticeable changes in the character of the environment but without significant consequences. This is the second lowest definition of impact taken from the Guidelines on the Information to be Contained in Environmental Impact Statements prepared by the Environmental Protection Agency (2017 Draft).

5.5.1.2.2 Impact on Human Health from Air Quality

Traffic related air emissions have the potential to impact human health if they do not comply with the ambient Air Quality Standards detailed in Table 9.1 of Chapter 9: Climate (Air Quality & Climate Change). However, as there is minimal car parking associated proposed as part of the Dublin Central Masterplan, the traffic generated does not satisfy the assessment criteria to require an air modelling assessment as outlined in Section 9.2.3.1 of Chapter 9: Climate (Air Quality & Climate Change) and therefore there is no potential for significant impacts. It can be determined that the impact to human health during the operational stage is **neutral, local, long-term and imperceptible**.

5.5.1.2.3 Impact on Human Health from Noise & Vibration

As detailed in Chapter 11: Air (Noise & Vibration), noise modelling was undertaken to assess the impact of the implementation of the Dublin Central Masterplan with reference to noise limits typically applied by Dublin City Council (DCC) and the Environmental Protection Agency (EPA). The predicted noise emissions associated with the implementation of the Dublin Central Masterplan during the operational phases (included in Section 11.5.1.2.1 of Chapter 11: Air (Noise & Vibration) should be compliant with the adopted noise limit values which are based with due consideration of the effect on human health. Furthermore, any change in noise levels associated with additional vehicles at road junctions in the vicinity of the Dublin Central Masterplan is expected to be **imperceptible**.

In essence, the noise levels that are encountered at the nearest noise sensitive locations are predicted to be within relevant noise criteria that have been adopted here for the operation of the Proposed Development and associated infrastructure. These criteria have been selected with due consideration to human health, therefore, will not result in a significant impact on human health.

The implementation of the Dublin Central Masterplan will not generate any perceptible levels of vibration during operation and therefore there will be no impact from vibrations on human health.

5.5.1.2.4 Impact on Local Amenities and Tourism

Once operation the Dublin Central Masterplan will have significant and positive impact upon the availability and quality of local amenities and also upon tourism.

The implementation of the Dublin Central Masterplan will provide increased leisure opportunities, public open spaces, community meetings areas and cultural facilities, all of which will have significant and positive impact on local amenities. Access to other amenities in the area will remain unaffected.

The implementation of the Dublin Central Masterplan will improve tourism resources in Dublin City, providing increased tourism accommodation which will be augmented by the provision of retail, cafes, restaurants and the aforementioned leisure, community and cultural provisions.

5.5.1.2.5 Impact on Material Assets

Dublin City Council and Irish Water have been consulted in relation to the the public water system and the foul sewerage system for the Proposed Development. Due to the management of the public system by Irish Water it is not believed there will be an impact upon any individuals relying on these services for healthcare reasons.

5.5.1.2.6 Impacts from Additional Traffic

There will be an increase in traffic arising from the operational phase of the Dublin Central Masterplan. As detailed in Chapter 13: Material Assets (Transportation) of this EIAR, there will be no discernible impact to human health arising from the noise and air quality related to additional traffic.

5.5.1.2.7 Impacts from Unplanned Events / Impacts on Health and Safety

The implementation of the Dublin Central Masterplan has been designed by skilled personnel in accordance with internationally recognised standards, design codes, legislation, good practice and experience based on a number of similar existing developments.

5.5.1.3 Do-Nothing Impact

If the Dublin Central Masterplan were not to be implemented, the subject land would for the short term remain as it is in which case there is no potential for the positive impacts associated with increased housing supply, increased tourist revenue, and increased local amenities and community spaces.

In the long-term, it is likely that the lands would be developed in time for another similar development in line with the zoning of the site.

5.5.2 Proposed Development Site 3, 4 & 5

5.5.2.1 Construction Stage

The Potential Impacts of the Proposed Development (Sites 3, 4 and 5) are the same as the Potential Impacts of the Dublin Central Masterplan described in Section 5.5.1.1. The only change is for each individual Site 3, 4 & 5 (Table 9.17 of Chapter 9: Climate (Air Quality & Climate Change)) there is a negligible risk of human health impacts from demolition dust emissions.

5.5.2.2 Operational Stage

The Potential Impacts of the Proposed Development (Sites 3, 4 and 5) are the same as the Potential Impacts of the Dublin Central Masterplan described in Section 5.5.1.2

5.5.2.3 Do-Nothing Impact

If the Proposed Development were not to proceed, the subject land would for the short term remain as it is in which case there is no potential for the positive impacts associated with increased housing supply, increased tourist revenue, and increased local amenities and community spaces.

In the long-term it is likely that the lands would be developed in time for another similar development in line with the zoning of the site.

5.5.3 Cumulative

5.5.3.1 Construction Stage

The cumulative impact of other potential impacts on human health from air quality, noise quality and traffic have been incorporated into the various models and assessments that have contributed to section 5.5.1 of this EIAR.

5.5.3.2 Operational Stage

The cumulative impact of other potential impacts on human health from air quality, noise quality and traffic have been incorporated into the various models and assessment that have contributed to section 5.5.2 of this EIAR.

5.6 MITIGATION MEASURES (AMELIORATIVE, REMEDIAL OR REDUCTIVE MEASURES)

The impacts on the local population in terms of residents and businesses are considered to be mainly positive in the sense of creating direct employment opportunities and indirect additional business, both during the construction and operational phases. Once operational there will be significant positive contributions to the residential, community and cultural aspects of Dublin City Centre.

Mitigation measures proposed to minimise the potential impacts on human health in terms of air quality and climate, traffic, noise and vibration are discussed in the relevant sections of Chapters 9: Climate (Air Quality & Climate Change), Chapter 11: Air (Noise & Vibration) and Chapter 13: Material Assets (Transportation) of this EIAR respectively.

Similarly, mitigation measures set out in Chapter 7: Land, Soils & Geology and Chapter 8: Water of the EIAR will ensure the risk of impacts to Human Health is low and that the residual effect on the environment is imperceptible.

5.6.1 Dublin Central Masterplan

5.6.1.1 Construction Stage

Prior to the commencement of construction, the appointed contractor will be required to obtain formal agreement from the Local Authority on pollution prevention measures as well the overall approach and emergency procedures for all construction stages. All demolition works are to be in accordance with the following guidelines: -

- BS 6187:2000 '*Code of Practice for Demolition*'.
- Health and Safety Executive Guidance Notes GS 29 / 1, 2, 3 & 4.
- S.I. 504 Safety, Health & Welfare at Work (Construction) regulations 2013.
- Air Pollution Act 1987.
- Environmental Protection Agency Act 1992.
- BS 5228:2009 Part 1 '*Noise Control on Construction & Open Sites*'.

Prior to the works commencing, detailed photograph surveys (condition schedules) of adjoining walls, roads, footpaths, grass verges etc. are to be prepared. Copies of the relevant parts are to be made available to adjoining owners and Dublin City Council. This record will form the basis of assessing repairs to adjoining areas in the future should a dispute arise as to their cause.

Roadways are to be kept clean of dirt and other debris. A road sweeping truck is to be provided if necessary, to ensure that this is so.

The Contractor will be responsible for the security of the site. The Contractor will be required to: -

- Operate a site induction process for all site staff.